



Homeowner Perceptions of Aquatic Invasive Species: Results from a survey of lakeshore property owners in Wisconsin

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Introduction to the study



Unintended consequences: Aquatic invasive species prevention

- Current AIS outreach primarily targets transient anglers
- Wisconsin rates well on AIS-prevention behaviors among boaters
- Now addressing issue of homeowners advocating for management approaches that might achieve management goals or could produce unwanted impacts

Purpose of Study

- Despite being a key stakeholder group, lakeshore property owners are understudied in academic literature
- Lakeshore property owners often left dealing with the consequences of AIS spread by others
- It is important to understand how this key stakeholder group views AIS and what their risk and benefit perceptions are for various management strategies used to manage AIS
- One potential unintended consequence of successful AIS prevention messaging might be an increase in the negative reactions and risk perceptions about AIS among lakeshore property owners

Types of AIS messaging

Militaristic Metaphors

- Militaristic metaphors focus on concepts like “invasions”, “war” against invasive species.
- Fear-based appeals



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Types of AIS messaging

Nativist Metaphors

- Invasive plants “don’t belong” and therefore must be removed
- Xenophobic connotations
- Rhetoric is similar to that which is used in discussions about immigration, foreigners, or refugees
- Fear-based appeals



Issues with framing AIS

- Recent research examined the impact of the framing of AIS on social media
- Messages with sensationalized framing were not found to be more effective or engaging than science-based messaging (Shaw, Campbell & Radler, 2021)
- Emotional framing of AIS may increase fear and anxiety about AIS without resulting in increased awareness or knowledge of how to manage AIS once present in lake



About the survey

- Sample frame created from statewide data set
- Initial sample of 1200 individuals identified as owning a property on a lake in WI
 - Across three categories:
 - Uncolonized with AIS
 - Recently colonized with aquatic plants (2015 or more recently)
 - Established with aquatic plants (before 2015)
 - 747 surveys returned completed (63% response rate).
- Survey consisted of three mailings
 - Initial mailing of questionnaire with explanatory letter
 - Reminder letter a week later with \$1 incentive
 - Final reminder sent to those who did not complete survey
- Administration conducted by the University of WI Survey Center

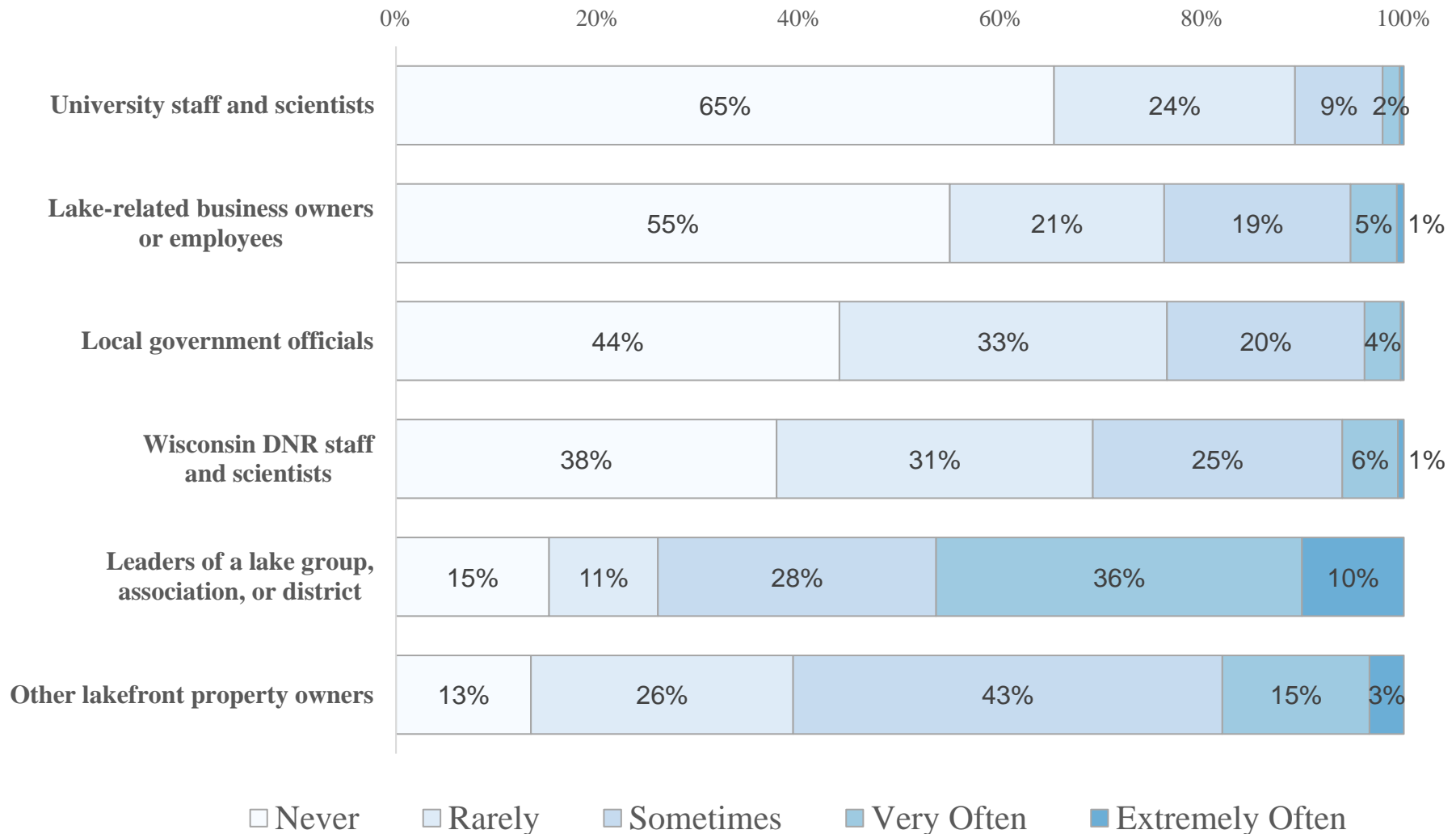


Key Findings



Sources of AIS information

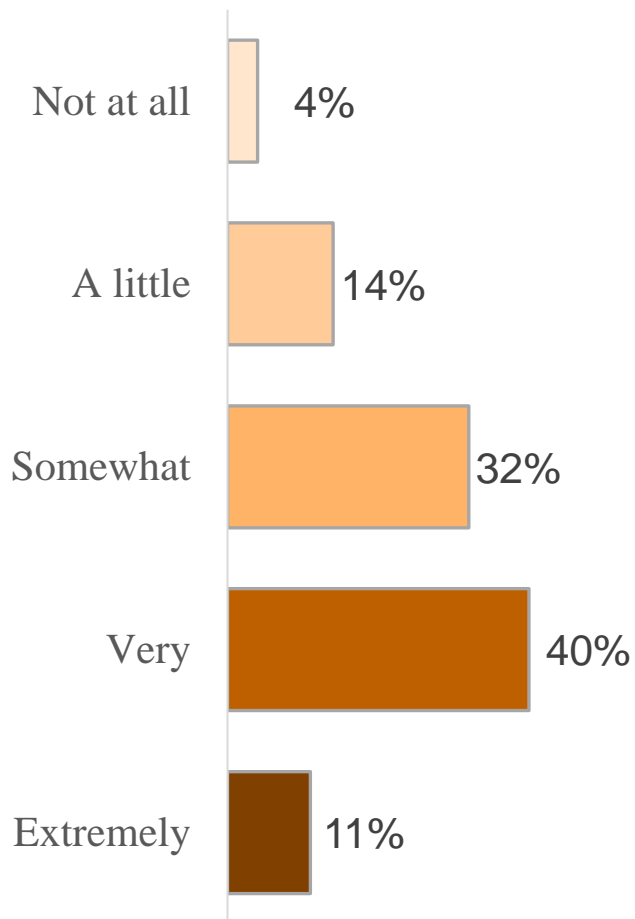
From where do you get your sources of information about AIS?



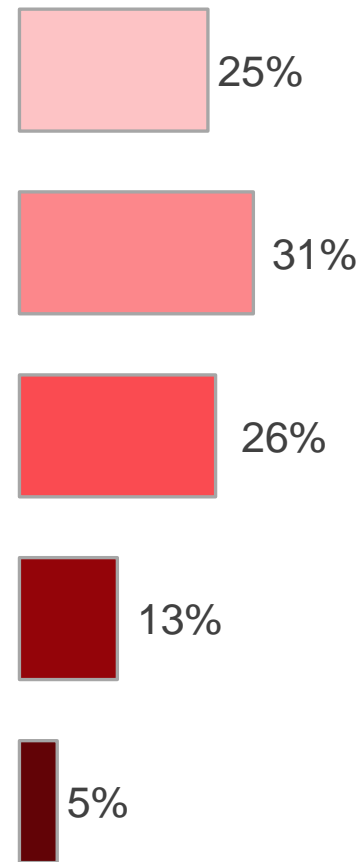
Familiarity

How familiar are you with...

Ways to prevent the spread of AIS?

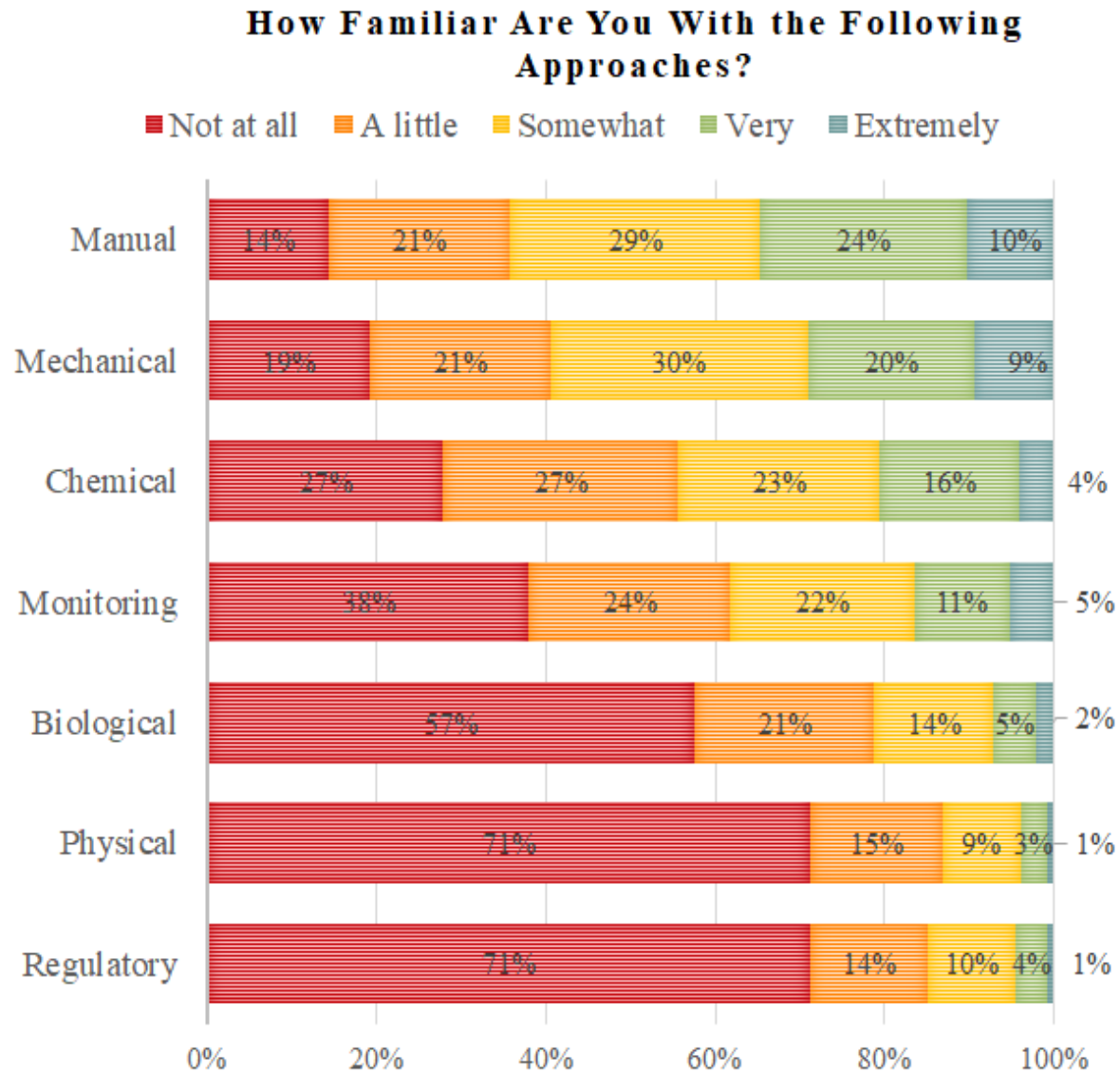


Ways to manage AIS once present?



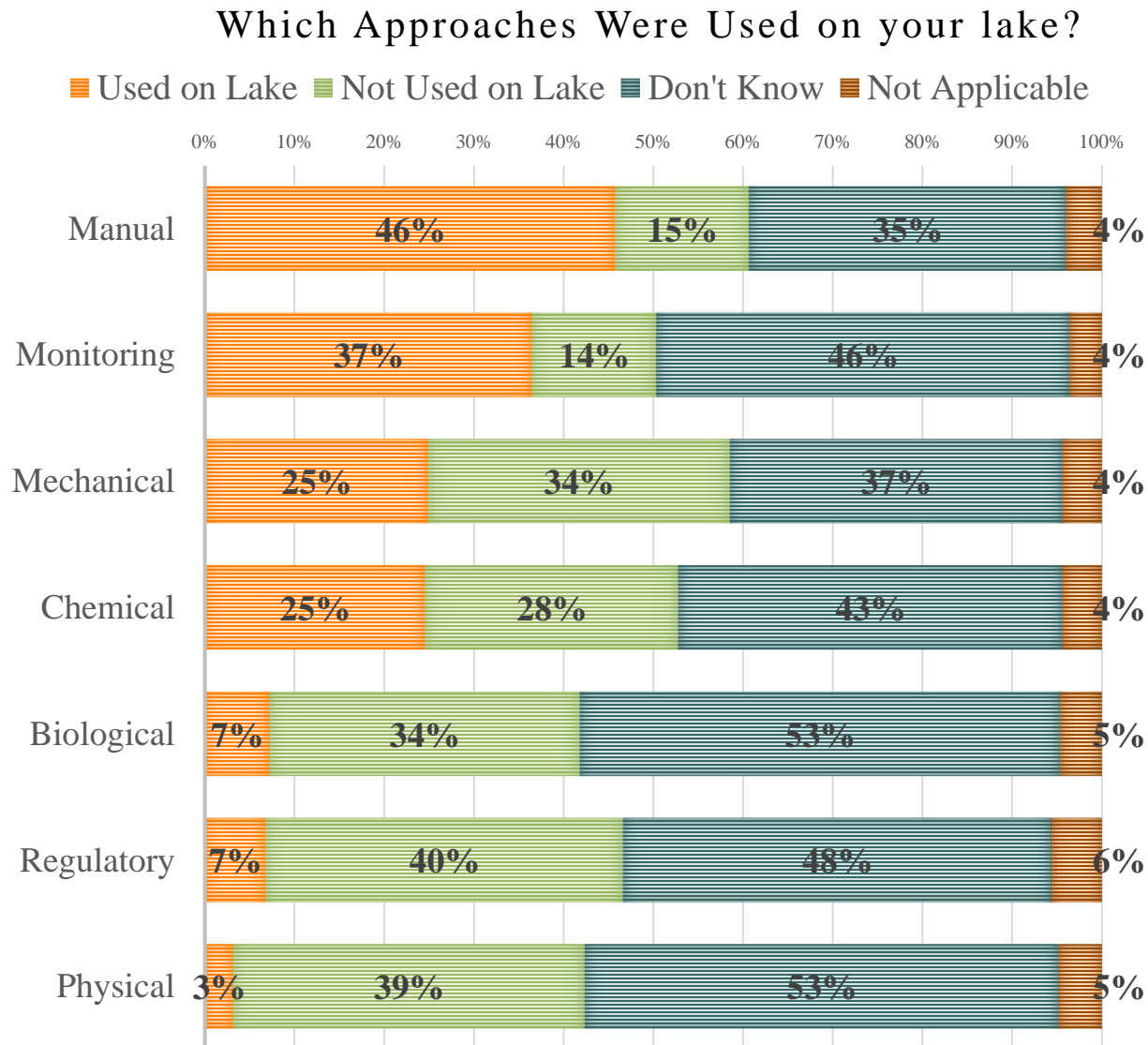
Familiarity

- Familiarity with management approaches varied
- Highest levels of familiarity for approaches like mechanical, manual, and chemical
- Lower levels of familiarity for biological, physical, and regulatory approaches



Familiarity

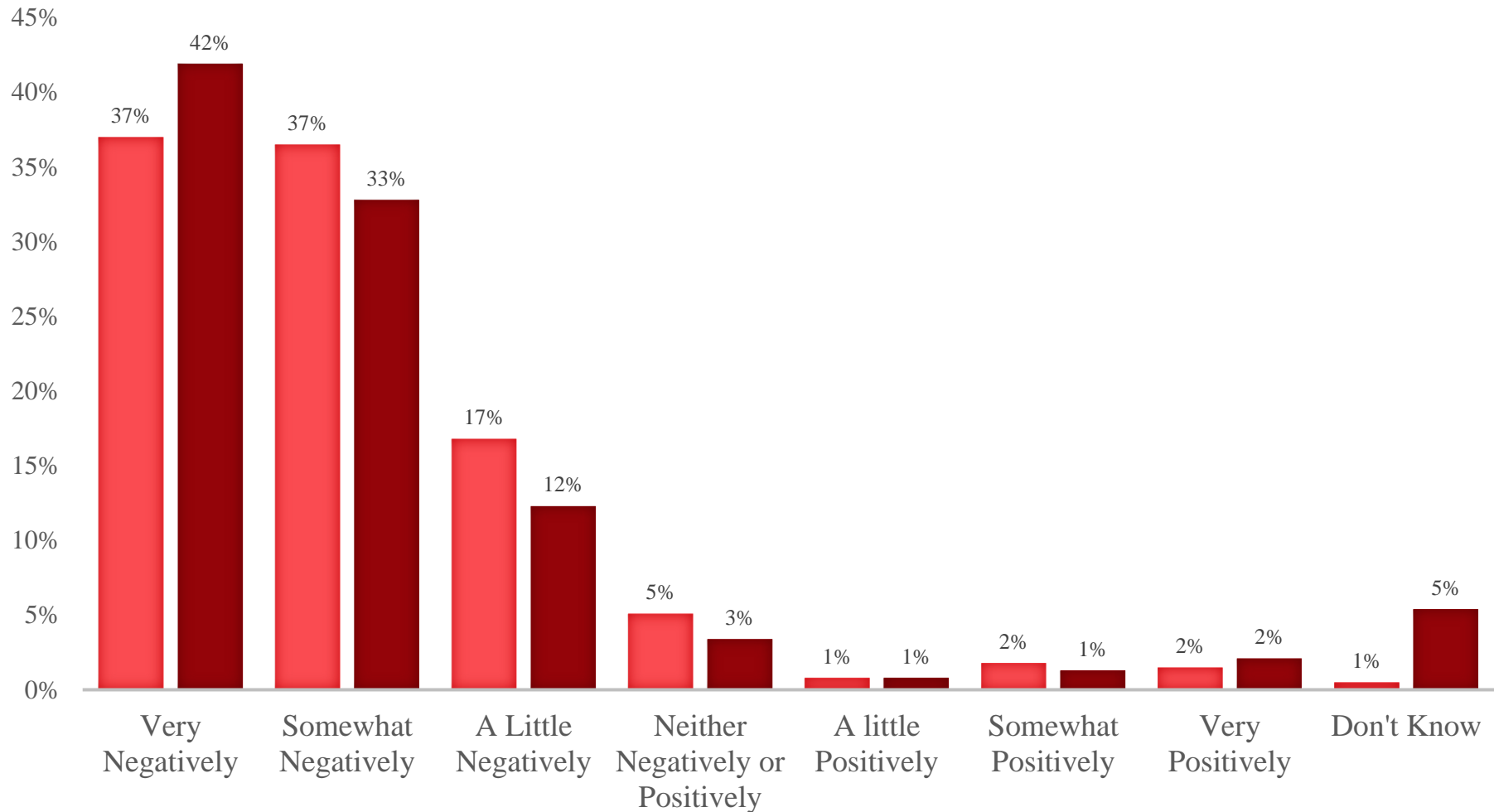
- Respondents reported varying levels of familiarity for different management approaches used on their lake.
- A considerable proportion of respondents across all categories reported not knowing what management approach was used on their lake.



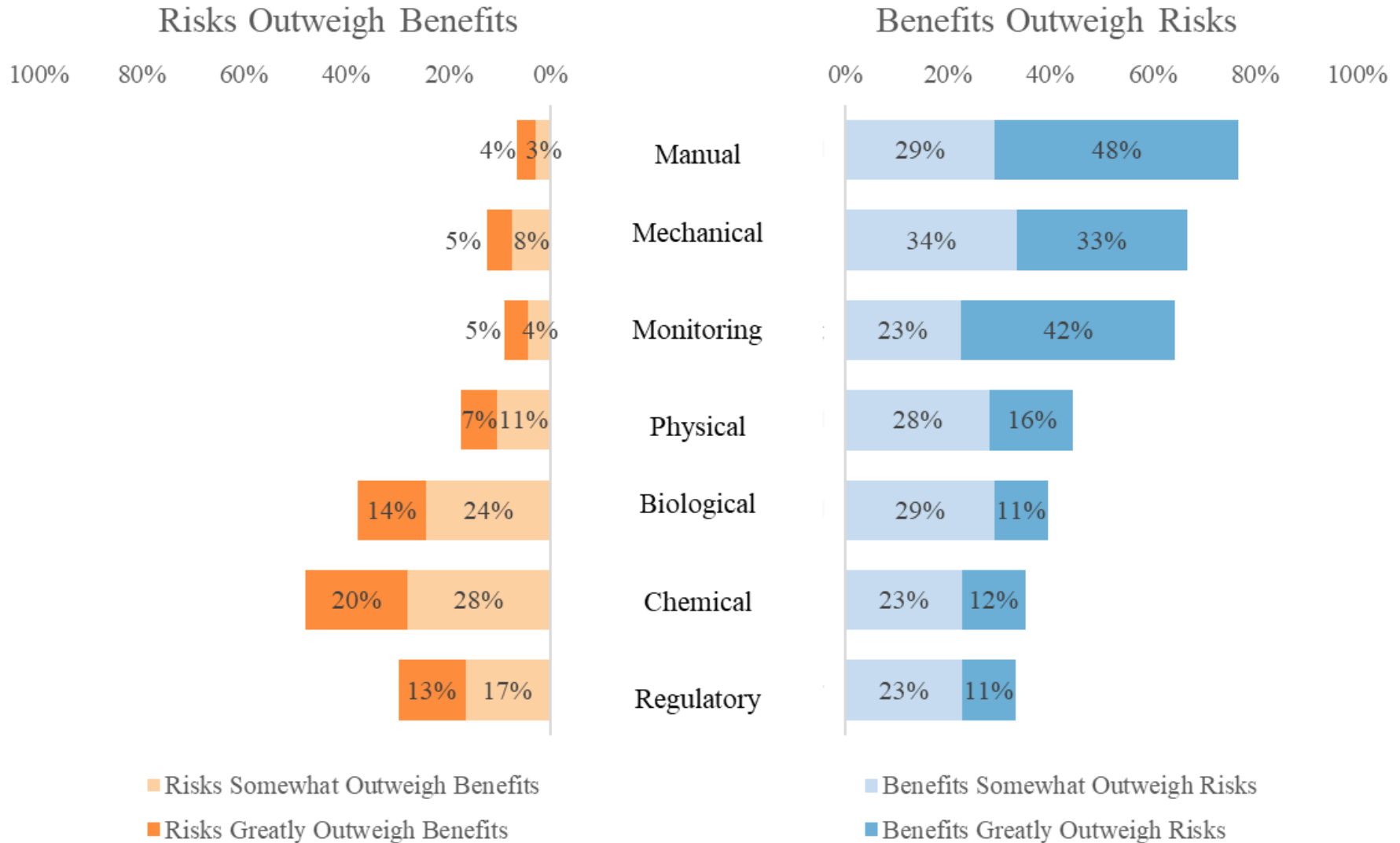
AIS Impact

How will AIS impact Wisconsin lakes?

■ Currently ■ In the future



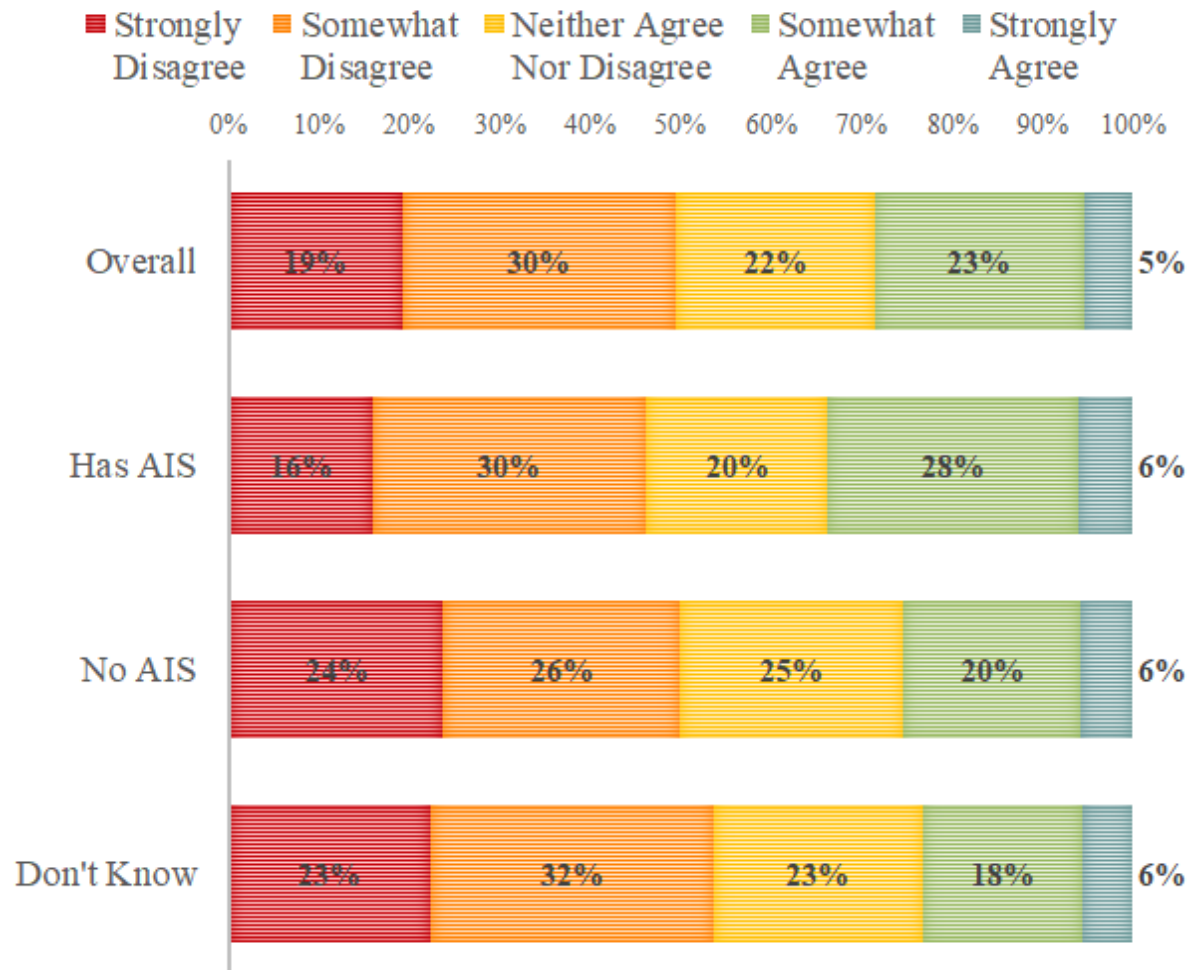
Perception of Risks and Benefits



Perceived knowledge of AIS

- Many do not agree that using chemical herbicides are worth using even if they harm native plants.
- A significant number do believe chemical herbicides are worth using even if they harm native plants.
- Percentages are similar regardless whether respondents believe their lake has AIS or not.

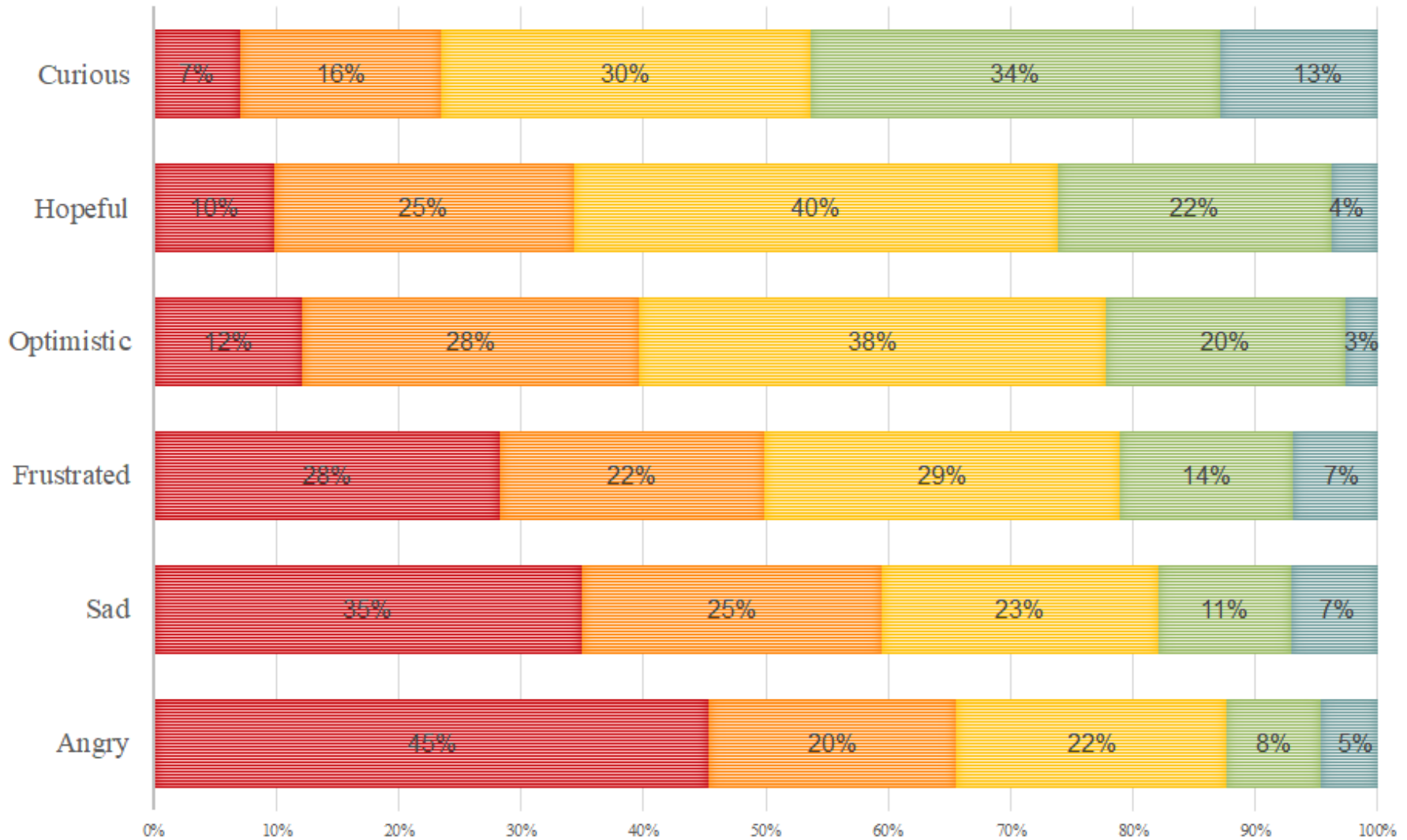
A Chemical Herbicide is Worth Using Even if it Harms Native Plants



Emotions

When thinking about managing AIS on your lake, how do you feel?

■ Not at all ■ A little ■ Somewhat ■ Very ■ Extremely





Recommendations and Conclusion



Recommendations

- Address lakeshore property owner prevention-management knowledge gap.
- Capitalize on curiosity to educate about management while minimizing emotionally charged language.
- Sharing risk/benefit opinions of lakeshore property owners could help set social norms among community members about management approaches – community, not personal, decisions.
- Continue to position lake organizations and leaders as a source of information on these issues.



Recommendations

- Communications to lakeshore property owners should emphasize:
 - What approaches have been used on their lake
 - The effects different management approaches might have on their lake
- Consider messaging that reduces feelings of fear and anxiety about AIS
- Monitoring as active management: Provide lakeshore property owners an opportunity to become engaged by taking an active role in monitoring AIS

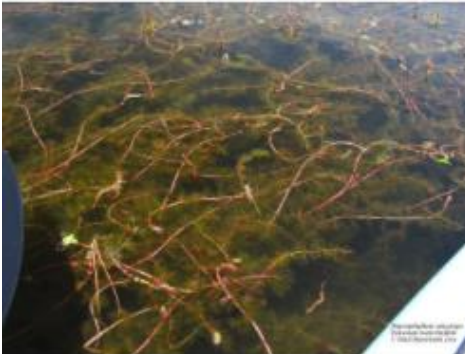
Next steps?

- Rapid response kit for homeowners with AIS
 - Fact sheet for homeowners, developed in partnership with the Wisconsin DNR
 - Social media ads targeting homeowners
- Social media sites like Facebook provide powerful tools to target specific subsections of the population with specific messaging




AIS Rapid Response Kit for Lakeshore Property Owners

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If you are a Wisconsin homeowner living on a lake with invasive plants, find out what management options are available to you.



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Aquatic Invasive Plants: Management Options for Lakeshore Property Owners

The purpose of this fact sheet is to provide Wisconsin lakeshore property owners with information about different types of aquatic invasive plant management strategies they can use. A recent survey conducted by the University of Wisconsin–Madison found that many

lakeshore property owners in Wisconsin are largely unfamiliar with the ways to manage aquatic invasive plants once they have been found in their lake.



A lakeshore property owner performs a rake toss aquatic plant survey. Monitoring for aquatic invasive species is one effective action that lakeshore property owners can take.
Credit: Gillian Smith, RCSD

Important questions for lakeshore property owners to consider:

- What are your options for maintaining the health of your lake?
 - What invasive plant control methods are consistent with your values and those of your community?
 - What is the best invasive plant management strategy for your lake?
- Invasive plant management strategies can sometimes come with unintended consequences for non-target plants, and no single management strategy will be a perfect solution. Therefore, it is important to consider advantages and disadvantages to whichever strategy you and/or your lake community are interested in. Mechanical harvesting, for example, could potentially harm native plants by incidental uptake as the mechanical harvester moves across the lake. Chemical treatments, because they are dispersed into the water, may impact non-target plants more broadly. Although both mechanical and chemical methods are common and effective ways to manage invasive plants, an integrated pest management (IPM) approach, which considers a combination of available management actions, is oftentimes the best approach to managing invasive plants.

Lake Tides Newsletter

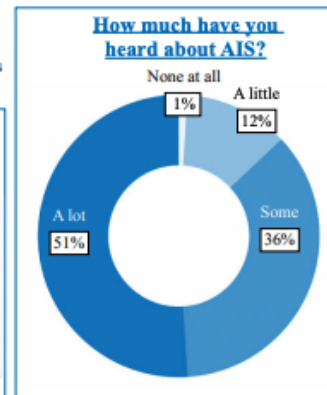
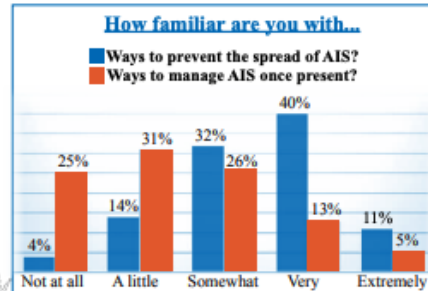
AIS! Now What Do We Do? Lakeshore Property Owners Have Opportunity to Learn More About AIS Management Strategies

By Tim Campbell, Wisconsin Sea Grant, Richard James Heinrich and Bret Shaw, University of Wisconsin-Madison, and Dominique Brossard, Morgridge Institute for Research

Results of this study indicate that many folks have heard about aquatic invasive species (AIS), but are much less familiar with management options.

Aquatic invasive species (AIS) prevention and management are large parts of our lakes and rivers programs, with millions of dollars awarded by the Wisconsin Department of Natural Resources (DNR) and federal agencies to help manage these threats to our waters. Understandably, significant attention has been devoted to prevent invasive species from becoming established in Wisconsin lakes, since this is often a more cost-effective option. However, once invasive species become established, they are generally here to stay. Changes in regulations, including more strict ballast water management and prohibited species lists, have prevented species from being introduced in the first place. Moreover, boater education programs like Clean Boats, Clean Waters and Stop Aquatic Hitchhikers messaging have helped boaters take action to prevent the spread of invasive species. Previous University of Wisconsin and Wisconsin DNR research suggests that these programs are working, with the invasion rate not increasing as predicted and boaters having high reported compliance with invasive species prevention steps.

Unfortunately, new invasions do still occur, and the need to understand the impacts of the new invasive species and the potential management options exists. Lakeshore property owners and lake organization members, who are often the people leading efforts to manage invasive species in their lakes and often deal with the consequences when invasive species become established, especially need to be aware of potential management options. A recent survey of lakeshore property owners conducted by the Department of Life Science Communications and Division of Extension at the University of Wisconsin-Madison indicated that familiarity with AIS was quite high among respondents. Approximately 51% of respondents reported hearing "a lot" about AIS, while only about 1% reported hearing "nothing at all". However, when examining familiarity with ways to manage AIS once they are present in a lake, 25% of respondents reported being "not at all" familiar.





Thank you!



Questions?

Method

Management approaches described in the survey:

Biological approach	... using a known pest of a plant, such as an insect.
Chemical approach	... applying chemicals, also known as herbicides.
Manual approach	... pulling or raking plants by hand from the shore, by boat, or using divers.
Mechanical approach	... using motorized equipment such as a weed cutter or harvester.
Monitoring approach	... conducting surveys to track the growth of a plant over time.
Physical approach	... using a barrier, such as a tarp, to block the growth of plants.
Regulatory approach	... changing rules such as blocking off part of a lake or changing water levels.